# (19) World Intellectual Property **Organization**

International Bureau



# 

#### (43) International Publication Date 10 March 2005 (10.03.2005)

### **PCT**

## (10) International Publication Number WO 2005/021129 A1

B01D 21/01, (51) International Patent Classification<sup>7</sup>: C02F 1/54, 1/56

(21) International Application Number:

PCT/AU2004/001158

(22) International Filing Date: 27 August 2004 (27.08.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2003904751 2004901610 29 August 2003 (29.08.2003) AU 25 March 2004 (25.03.2004) AU

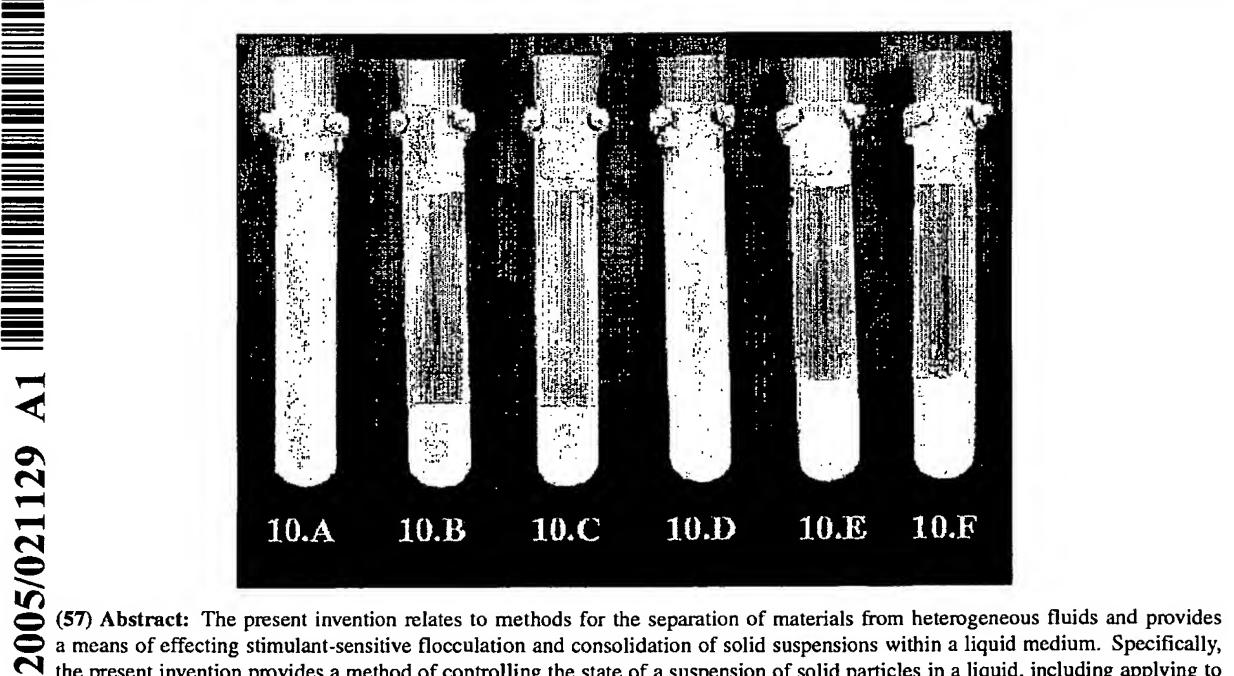
- (71) Applicant (for all designated States except US): THE UNIVERSITY OF NEWCASTLE RESEARCH AS-SOCIATES LIMITED [AU/AU]; Industry Development Centre, University Drive, Callaghan, NSW 2308 (AU).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): FRANKS, George, V. [AU/AU]; The University of Newcastle Research Associates, Limited, Industry Development Centre, University Drive, Callaghan, NSW 2308 (AU). JAMESON, Graeme, John [AU/AU]; The University of Newcastle

Research Associates, Limited, Industry Development Centre, University Drive, Callaghan, NSW 2308 (AU). YAN, Yao-de [AU/AU]; The University of Newcastle Research Associates, Limited, Industry Development Centre, University Drive, Callaghan, NSW 2308 (AU). BIGGS, Simon, Richard [AU/AU]; The University of Newcastle Research Associates, Limited, Industry Development Centre, University Drive, Callaghan, NSW 2308 (AU).

- (74) Agent: SHELSTON IP; 60 Margaret Street, Sydney, NSW 2000 (AU).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH,

[Continued on next page]

(54) Title: STIMULANT SENSITIVE FLOCCULATION AND CONSOLIDATION



the present invention provides a method of controlling the state of a suspension of solid particles in a liquid, including applying to the suspension a stimulus adapted to control inter-particle forces between the solid particles. The stimulus is reversibly operable to control attraction and/or repulsion. Means of consolidating a sediment bed and of separating the resultant liquids-rich and solids-rich phases are also within the ambit of the invention.



# WO 2005/021129 A1

GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.